

CLAIMS

1. An integrated circuit (10; 110; 110'; 210; 310) for an on-wire communication system, comprising several communication connections (C; C, C') for connecting external electrical signal lines (L),

wherein an input/output circuit (IO; O, I) for inputting and/or outputting communication signals (S) from or to the signal lines (L) is associated with each communication connection (C; C, C');

wherein one of several thyristors (TY) is associated with each communication connection (C; C, C'), in order to reduce any overvoltage which occurs at any one of the communication connections (C; C, C') by a current flow through the associated thyristor (TY);

wherein a control electrode (G') of each thyristor (TY) is connected to a control circuit (CO; INV) which detects a current flow through this thyristor (TY) and in the case of a detected current flow de-energises that input/output circuit (IO; O) which is associated with that communication connection (C; C, C') with which this thyristor (TY) is associated.

2. The integrated circuit (10; 110; 110'; 210; 310) according to claim 1, wherein the anode (A) or cathode (K) of at least one of the thyristors (TY) is connected to a communication connection (C; C, C'), and the cathode (K) or anode (A) of this thyristor (TY) is connected to a supply potential (VDD, VSS) of the integrated circuit.
3. The integrated circuit (10; 110; 110'; 210; 310) according to claim 1, wherein the anode (A) or cathode (K) of at least one of the thyristors (TY) is

connected to cathodes (K) or anodes (A) of several diodes, and the anodes (A) or cathodes (K) of these diodes are connected to various communication connections (C; C, C') so as to reduce, by means of said thyristor (TY), overvoltages which occur at these communication connections.

4. The integrated circuit (10; 110; 110'; 210; 310) according to claim 1, wherein at least one (TYab) of the thyristors (TY) is a multiple thyristor comprising several cathodes (K) or several anodes (A), and these cathodes (K) or anodes (A) are connected to various communication connections (C; C, C') so as to reduce, by means of said thyristor (TYab), overvoltages which occur at these communication connections.
5. The integrated circuit (10; 110; 110'; 210; 310) according to claim 1, wherein at least one of the thyristors (TY) is designed with a threshold voltage which is less than 150 % of the maximum operational voltage which is present at this thyristor (TY).
6. The integrated circuit (10; 110; 110'; 210; 310) according to claim 1, wherein at least one of the control circuits (CO; INV) is an inverter, whose input is connected to the control electrode (G') of at least one of the thyristors (TY).
7. The integrated circuit (10; 110; 110'; 210; 310) according to claim 1, wherein each of the communication connections (C; C, C') is associated with precisely one of several communication channels of the integrated circuit, and each of the thyristors (TY) is associated with precisely one of the communication channels.